

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

WRITTEN OPINION
(PCT Rule 66)

Applicant's or agent's file reference 48487-PT		Date of mailing (day/month/year)	09.06.2004
International application No. PCT/CA 03/01624		International filing date (day/month/year)	24.10.2003
		Priority date (day/month/year)	25.10.2002
International Patent Classification (IPC) or both national classification and IPC C22C1/10			
Applicant ALCAN INTERNATIONAL LIMITED et al.			

- This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application
- The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 25.02.2005

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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-19 as originally filed

Claims, Numbers

1-33 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	7-11 (yes) 1,12,14,15,18-21,24-29,30-33 (no)
Inventive step (IS)	Claims	7-11 (yes)
Industrial applicability (IA)	Claims	1-33

2. Citations and explanations**see separate sheet**

Section V

1. The Prior Art

D1: Lucas, Stephens, Greulich: 'The Effect of Reinforcent Stability on Composition Redistribution in Cast Aluminium Metal Matrix Composites' MATERIALS SCIENCE AND ENGINEERING, no. A131, 1991, pages 221-230, XP002270490 USA.

D2: US-A-4 786 467 (Skibo Michael d et al) 22 November 1988 (1988-11-22)

2. Novelty (Article 33(2) PCT)

D1 concerns cast aluminium metal matrix composites that are reinforced with B₄C particles and discloses the following features:

- i. A method of preparing a cast A356 alloy Al matrix composite consisting of:
 - melting of the A356 Al matrix alloy which has a composition 7% Si, 0.35% Mg, 0.2% Ti, balance Al.
 - adding 25% vol% B₄C particles to a melt of said alloy
 - mechanically stirring mixture to promote wetting
 - stir casting

ii. A final product which is the said alloy reinforced with 25% vol B₄C particles in the form of bars. (See p. 222-223 and tables 1 and 2)

D2 concerns the fabrication of Al based cast metal matrix composites and discloses the following features:

- i. A method of producing a cast Al alloy matrix composite consisting of:
 - melting of either Al or the Al matrix alloy
 - adding B₄C particles to said molten Al or Al alloy
 - mechanically stirring mixture to promote wetting
 - stir casting

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ii. A final product which is an Al or al alloy reinforced with 5-40% vol B₄C particles and which is subsequently either rolled or extruded. (see col 3 and 4, col 5 l. 27-41, col 8 l. 35, col 9 l. 3-7)

In view of the above disclosed features in D1 and D2, claims 1,12,14,15,16,18,19,24,26-29,30,31-33 lack novelty with respect to D1 and claims 1-5,18-21 lack novelty with respect to D2.

None of the available prior art appears to disclose the subject matter of claims 7-11. Accordingly claims 7-11 are novel and would appear to be inventive.